



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: ACTIVIN RECEPTOR-LIKE KINASES, PROTEINS HAVING SERINE THREONINE KINASE DOMAINS AND THEIR USE			
<pre> cons..aa      G C G V      A K      Z HTGFBR-II    LDTLVGKGRFAEYVTAQLKQNTSEQFETVAVKIIPPYDHYASWDRKDI FSDINLKHENTLLOF BACTR-IIB    LLETIKARGRFCCVWKAQLMN-----DFVAVKI KPLQDKSQSWQSEREIFSTPGQCHENLLOF BACTR-II     LLEVKARGRFCCVWKAQLLN-----ETVAVKI FPIQDKSQSWQNEYEVYSIPQSGHENTLLOF daf-1        LKRVGSGRFGNVSRCGYRG-----EAVAVKVFNAIDEPAPHKEIEIETPRMLRHPVRLRY subdomains   I              II       III      IV  HTGFBR-II    LTAERKTELCKQYMLITAFHAKGHLQEYLTRHVISWEDLRNVGSSLARGLSHLKSDHTP-C BACTR-IIB    IAAEGRGNSLEVEMLITAFHDKGSLIDYLKQNIITWNECHVAETHSRGISYLNHEDVPMCR BACTR-II     IGAECRGTSDVDMLITAFHEKGSLSDFLKARVVSWNELCHIAETHARGLAYLHEDI PGLK daf-1        IGSRRVDTGFTVTEMLVITEYHPSGSLDFLENTVNIETTYNLMRSTASGLAFLANQIGGSK subdomains   V              VI-A  cons..aa      DLK N      DFG HTGFBR-II    -GRPKPIVHRDLKSSNIVKNDLTCCLCD FGLSLRL---GPYSSVDDLANSQQVGTARYHAP BACTR-IIB    -GGHUPSIARDFKSKNVLLKSDLTAVLAD FGLAVRF---EPGKPPGD---THQVGTTRYHAP BACTR-II     -DGHKPAISHRDIKSKNVLLKQNLTA CLAD FGLALRF---BAGKSAGD---THQVGTTRYHAP daf-1        -ESNKPANAHRDIKSKNTMYKNDLTCAI GDLGLSLSKPEDAASDI IAN---ENYKCVTVRYLAP subdomains   VII-B             VII      VIII           </pre>			
(57) Abstract A new receptor family has been identified, of activin-like kinases. Novel proteins have activin/TGF-β-type I receptor functionality, and have consequential diagnostic/therapeutic utility. They may have a serine/threonine kinase domain, a DFKSRN or DLKSKN sequence in subdomain VIB and/or a GTKRYM sequence in subdomain VIII.			